

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method of partitioning a reference database for determining a reflectance spectrum, comprising:

establishing a plurality of clusters, each cluster initially being an empty set;

identifying, for each training sample of a plurality of training samples, a most appropriate cluster among the plurality of clusters; and

_____ assigning each training sample to the most appropriate cluster, thereby filling the empty sets, each training sample correlating a reference spectrum with a corresponding plurality of normalized illuminant sensor outputs for reference colors.

2. (Currently Amended) The method according to claim 1, wherein:

the establishing the plurality of clusters comprises establishing a plurality of cluster centroids; and

the identifying of the most appropriate cluster comprises obtaining, for each training sample, a Euclidean distance from the training sample to each of the cluster centroids, such that a plurality of Euclidean distances are determined for each training sample.

wherein the most appropriate cluster is determined to be the cluster associated with the cluster centroid having the shortest Euclidean distance among the plurality of Euclidean distances.

3. (Original) The method of claim 2, further comprising:

obtaining an average distortion based on the shortest Euclidean distance for each training sample;

updating the cluster centroids to decrease the average distortion; and

re-identifying the most appropriate cluster for each training sample and re-assigning the training samples based on the updated cluster centroids.

4. (Original) The method according to claim 1, wherein:

the establishing the plurality of clusters comprises establishing a plurality of cluster centroids, the cluster centroids being established through vector quantization.

5. (Previously Presented) A reference database partitioned by the method of claim 1, the reference database being machine-readable.

6. (Original) A storage medium on which is recorded a program for implementing the method of claim 1.

7-14. (Canceled)

15. (New) A method of partitioning a reference database for determining a reflectance spectrum, comprising:

establishing a plurality of clusters;

identifying, for each training sample of a plurality of training samples, a most appropriate cluster among the plurality of clusters; and

assigning each training sample to the most appropriate cluster, each training sample correlating a reference spectrum with a corresponding plurality of normalized illuminant sensor outputs for reference colors, wherein:

the establishing the plurality of clusters comprises establishing a plurality of cluster centroids; and

the identifying of the most appropriate cluster comprises obtaining, for each training sample, a Euclidean distance from the training sample to each of the cluster centroids, such that a plurality of Euclidean distances are determined for each training sample,

wherein the most appropriate cluster is determined to be the cluster associated with the cluster centroid having the shortest Euclidean distance among the plurality of Euclidean distances.

16. (New) The method of claim 15, further comprising:
obtaining an average distortion based on the shortest Euclidean distance for each training sample;
updating the cluster centroids to decrease the average distortion; and
re-identifying the most appropriate cluster for each training sample and re-assigning the training samples based on the updated cluster centroids.

17. (New) A reference database partitioned by the method of claim 15, the reference database being machine-readable.

18. (New) A storage medium on which is recorded a program for implementing the method of claim 15.